

Response
Application No. 10/695,643
Attorney Docket No. 032057

REMARKS

Claims 1-16 are pending in the application. Claims 1, 3, 5 and 8 have been rejected. Claims 2, 4, 6 and 7 have been objected to. No claims have been cancelled or amended. In light of the following arguments, applicants respectfully request favorable reconsideration.

Applicants thankfully acknowledge that claims 9-16 have been allowed and claims 2, 4, 6 and 7 would be allowed if rewritten in independent form including all of the limitations of the base claim and any intervening claim.

On the Merits

Claims 1, 3, 5 and 8 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over *Natori et al.* (2003/0021079) in view of *Nam* (2003/0057464) further in view of *Das et al.* (5,824,429). Applicants respectfully traverse this rejection.

Independent Claim 1

Independent claim 1 requires in part:

a ferroelectric layer formed on the capacitor lower electrode, and having an ABO₃ perovskite structure that contains Ir in at least one of an A site and a B site (A = any one of Bi, Pb, Ba, Sr, Ca, Na, K, and a rare earth element, B = any one of Ti, Zr, Nb, Ta, W, Mn, Fe, Co, and Cr)....

The Office Action has cited a new reference, *Das*, which it contends discloses the above mentioned feature in column 4 and in claims 2 and 4. There *Das* states in part:

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In both of the iridium-charged samples one finds aside from the orthorhombic starting lattice a rhomboidal lattice with significantly enlarged cell volume (Table 2 and FIG. 4). *This indicates that iridium has been incorporated in the perovskite lattice.* Emphasis added.

However, *Das* does not disclose what is required by independent claim 1, *a ferroelectric layer formed on the capacitor electrode, and having an ABO₃ perovskite structure that contains Ir in at least one of an A site and a B site.... Das does not mention an ABO₃ perovskite structure, nor one that contains Ir in at least one of an A site and a B site.* Simply finding a reference that appears to include Ir in a perovskite structure does not disclose what is required in independent claim 1.

Additionally, it appears that the perovskite lattices doped with iridium are in regards to electrodes. *Das* states, “The invention relates to a perovskite based electrode with solid electrolyte contact which is especially suitable for temperature fuel cells.” See Field of the Invention. In the Summary of the Invention, *Das* states that, “... iridium, which usually need[s] the influence of oxygen are high volatile as oxides, are found in perovskite. Thus doped electrodes [with Ir] additionally show improved electrochemical characteristics.” Emphasis added. Column 1, lines 51-54.

The present invention requires a “*ferroelectric layer ... having an ABO₃ perovskite structure*” Emphasis added. Thus, if *Das* were combined with Nam and Natori, the *ferroelectric layer* requirement would not be met since *Das* only appears to deal with *electrodes*. Thus, applicants submit that the Office Action has not shown a necessary element of independent claim 1.

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Furthermore, claims 2 and 4 of *Das* seem to be directed toward a similar embodiment and disclosure. *Das*, *Nam* and *Natori* fail to disclose or fairly suggest the above cited required elements of independent claim 1.

Dependent Claims 3, 5 and 8:

As claims 3, 5 and 8 each depend upon claim 1, the arguments presented above regarding claim 1 also apply to its dependent claims. As such, applicants respectfully traverse the rejection and submit dependent claims 3, 5 and 8 are in condition for allowance.

Obviousness Rejection:

In addition to the above mentioned arguments, in a §103(a) obvious type rejection, the Office Action must provide a suggestion, teaching or motivation as to why a person of ordinary skill in the art would want to combine the references. The Office Action contends that a person of ordinary skill in the art would want to combine the references “in order to have a semiconductor memory structure with more stable processing and more stable perovskite/ferroelectric structure.”

However, contrary to the Office Action’s assertion, applicants submit that there is no teaching in the cited references that this result would be achieved. The Office Action must show support for its assertion.

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Additionally, *In re Oetiker*¹ held that “In order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of the applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.”

The *Das* invention appears to be concerned with:

A boundary layer structure, useful in a fuel cell, includes a solid electrolyte and an electrode. The electrode consists essentially of a perovskite base material and a platinum group metal oxide addition, along the boundary between the perovskite and the electrolyte. Iridium oxide is a preferred metal oxide additional material....

Thus, as is apparent from the above mentioned disclosure and the Field of the Invention as quoted earlier, *Das* does not appear to be in the field of the applicant’s endeavor, but instead appears to be concerned with fuel cells.

Regarding the particular problem with which *Das* is concerned, *Das* states, “A special problem arises because of chemical exchange at the boundary surfaces of the different material pairs which can be detrimental. ... The object of the invention is therefore a reduction in the chemical exchange between the perovskites serving as electrodes and the solid electrolytes”

The present invention is concerned in part with improving the ferroelectric performance of the device. See Figures 9-17 and accompanying description. Thus, the respective inventions were concerned with different problems to be solved.

¹ 977 F.2d 1443

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Therefore, it appears that the Office Action has not met the required burden of showing obviousness under 35 U.S.C. § 103(a), because the references provide no motivation to combine, and the references are non-analogous art.

In view of the aforementioned remarks, Applicants submit that the claims are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned agent to arrange for an interview to expedite the disposition of this case.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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